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A METHOD OF TRIGGERING AN AUDIO AND/OR VISUAL FILE
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- (56) Prior Art Documents
AU 68461/90 G09F 21/04
AU 25218/88 G09F 21/04
AU 70796/91 G09F 21/04

(57) Claim

1. A method of triggering an audio and/or visual file in a mobile audio and/or visual system, the method comprising:-

determining the position of the audio and/or visual system;

comparing the determined position with a predetermined position or area having an associated audio and/or visual file; and

triggering the audio and/or visual file when the determined position corresponds to the predetermined position or area.

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PETTY PATENT SPECIFICATION FOR AN INVENTION ENTITLED:

A METHOD OF TRIGGERING AN AUDIO AND/OR VISUAL FILE

The following statement is a full description of this invention,
including the best method of performing it known to me/us:

"A METHOD OF TRIGGERING AN AUDIO AND/OR VISUAL FILE"

This invention relates to a method of triggering an audio and/or visual file and to a mobile audio and/or visual system.

This invention has particular but not exclusive application to mobile audio and/or visual systems in public transport vehicles such as buses, trains and ferries. However, the system could also be used in rental or private vehicles or could be carried by pedestrians.

As used herein the term "position" includes within its scope altitude.

This invention in one aspect resides broadly in a method of triggering an audio and/or visual file in a mobile audio and/or visual system, the method comprising:-

determining the position of the audio and/or visual system;

comparing the determined position with a predetermined position or area having an associated audio and/or visual file; and

triggering the audio and/or visual file when the determined position corresponds to the predetermined position or area.

In one embodiment the method further comprises determining the direction of travel of the mobile audio and/or visual system and triggering the audio and/or visual system only if the mobile audio and/or visual system is passing the predetermined position or area in a predetermined direction.

In another embodiment the method further comprises flagging an audio and/or visual file which has been triggered such that the audio and/or visual file will not be triggered a second time if the mobile audio and/or visual system passes the predetermined position or area a second or more times.

Preferably, the method further comprises monitoring

the distance that the mobile audio and/or visual system is from the predetermined position or area, and triggering the audio and/or visual file if the distance increases. Preferably, the audio and/or visual file is only triggered in response to an increasing distance once the audio and/or visual system has closed within a predetermined arming distance of the predetermined position or area.

Whilst the position may be determined by a number of means it is preferred that the position of the mobile audio and/or visual system is determined by GPS. Most preferably, the GPS is a differential GPS.

In systems where GPS is employed it is preferred that the determined position of the mobile audio and/or visual system is estimated when the GPS fails. Preferably, the estimate is based on one or more of (a) distance measuring means, (b) time elapsed means, (c) route information, (d) radio link.

It is envisaged that the audio and/or visual files will be stored on a form of magneto-optical storage means. The storage means could be periodically updated, eg via RF means such as a satellite, or other means. Thus, files relating to news and current affairs could be updated every hour whilst other program content could be updated at greater time intervals. However, at this stage it is preferred that the audio and/or visual files are recorded on CD ROM. In this arrangement a RAM buffer is provided and the audio and/or visual file data is fed from the CD ROM into the RAM buffer faster than the required data output such that errors due to vibration or skipping of the CD ROM can be corrected. The data output from the RAM buffer is fed to a digital to analogue converter.

In one embodiment the time of day is monitored for time specific audio and/or visual files.

Preferably the audio and/or visual file being played can be suppressed and the next audio and/or visual file can be triggered when the audio and/or visual system

reaches the next predetermined position or area prior to completion of playing of the audio and/or visual file being played.

In one embodiment the method further comprises
 5 estimating the time of arrival at the next predetermined position or area on a route. In this embodiment the audio and/or visual file being played can be suppressed and the next audio and/or visual file can be played when the audio and/or visual file being played will not be
 10 completed prior to the estimated time of arrival.

In another aspect the invention resides in a mobile audio and/or visual system comprising:-

means for storing data relating to a position or area;
 15 means for storing an audio and/or visual file corresponding to the position or area;
 means for determining the position of the mobile audio and/or visual system;
 means for comparing the determined position of the
 20 mobile audio and/or visual system with the stored position or area; and
 means for triggering the audio and/or visual file when the determined position corresponds to the stored position or area.

25 In one embodiment, the system includes means for determining the direction of travel of the mobile audio and/or visual system such that the means for triggering the audio and/or visual file is only operative when the mobile audio and/or visual system is travelling in a
 30 predetermined direction.

In another embodiment the system includes means for flagging an audio and/or visual file which has been triggered such that it cannot be triggered a second time.

35 Preferably, the system includes means for monitoring the distance between the mobile audio and/or visual system and the stored position or area such that the means for triggering the audio and/or visual file is operative if the distance increases.

Preferably the system also includes means for estimating the position of the mobile audio and/or visual system in the event that the means for determining the position of the audio and/or visual system fails.

5 Preferably the system also includes means for monitoring the time of day and means for inserting the time into a time specific audio and/or visual file.

10 Preferably the system also includes means for suppressing an audio and/or visual file being played when the next audio and/or visual file is triggered.

15 In one embodiment the system includes means for estimating the time of arrival at the next stored position or area and means for suppressing an audio and/or visual file being played if it concludes after the estimated time of arrival at the next position or area.

In order that this invention may be more easily understood and put into practical effect, reference will now be made to a preferred embodiment of the invention.

20 In the preferred embodiment the mobile audio/visual system is installed in a ferry, bus or train to provide information regarding, for example, points of interest, location of next stop, time of arrival etc.

25 The ferry, bus or train follows an established route. At certain points along the route it is desirable that audio/visual announcements be made, eg "On your right you will see...", or "This train is now arriving at Central" etc. The system ensures that such announcements are made at the correct location without making any demands on the driver. The driver would, of course, be
30 able to override the system or add further comments as necessary. The system includes a countdown timer which indicates to the driver the time until the next location triggered announcement. Accordingly, the driver can add his or her comments without interrupting the location
35 triggered announcement.

The announcements are pre-recorded to audio/visual files and the location at which they should be played is noted. This information together with route data is

stored.

The audio/visual system includes a differential global positioning system which determines the audio/visual system's position. When the determined
5 position corresponds to the stored location, the audio/visual file is triggered.

The stored position may be an area rather than a discrete point to take account of the fact that the bus or ferry might not exactly follow the pre-determined
10 route.

To further account for such deviations the audio/visual file will be triggered if the distance between the audio/visual system and the pre-determined position increases after the audio/visual system has
15 closed within a certain "arming" distance of the pre-determined position. For example, an audio/visual file relating to a significant landmark may be programmed to trigger once a ferry is within 100 metres of the landmark. The ferry may close within 200 metres of the
20 landmark (at which point the trigger is armed) and approach to 150 metres before having to turn away due to the presence of other boats or some other reason. As soon as the distance begins increasing the audio/visual file is triggered. Thus the file is triggered at the
25 best possible moment.

The system is programmed to ensure that the same audio/visual file is not played twice as, for example, could occur on an "out and back" tour. A file may be flagged so that it cannot be played a second time or the
30 system may include direction determining means such that the file will only be triggered whilst travelling in a pre-determined direction.

The system also has provision for loss of satellite reception. In circumstances where the GPS fails, the
35 approximate position of the system will be estimated. The bus, for example, may include a tachometer which counts wheel revolutions since reception was lost and hence enables the calculation of a distance. This

distance added onto the last GPS position along a predetermined route will give a good estimate of present position.

5 Each individual on a tour may have a personal audio/visual system and the audio/visual files may be in a number of languages. A person on a tour may select their preferred language. Similarly, the files may also be in a number of personalities or have different presenters to suit different tastes.

10 The system could also be used to ensure that entertainment such as movies are played at the correct position en-route.

The system includes a clock such that time specific announcements can be made, eg 15 minutes out of Canberra
15 the announcement might be "We will be arriving in Canberra at (present time plus 15 minutes)".

The audio/visual files are stored on CD ROM from which the data is fed to a RAM buffer at a rate greater than the required output rate. This gives the system the
20 opportunity to correct an errors caused by skipping of the CD ROM. Data is output from the RAM buffer to an digital-to-analogue converter.

It will of course be realised that whilst the above has been given by way of an illustrative example of this
25 invention, all such and other modifications and variations hereto, as would be apparent to persons skilled in the art, are deemed to fall within the broad scope and ambit of this invention as is herein set forth.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:-

1. A method of triggering an audio and/or visual file in a mobile audio and/or visual system, the method comprising:-
5 determining the position of the audio and/or visual system;
comparing the determined position with a predetermined position or area having an associated audio and/or visual file; and
10 triggering the audio and/or visual file when the determined position corresponds to the predetermined position or area.
- 15 2. A method as defined in claim 1, wherein the method further comprises flagging an audio and/or visual file which has been triggered such that the audio and/or visual file will not be triggered a second time if the mobile audio and/or visual system passes the
20 predetermined position or area a second or more times.
- 25 3. A method as defined in claim 1, wherein the method further comprises monitoring the distance that the mobile audio and/or visual system is from the predetermined position or area, and triggering the audio and/or visual file if the distance increases.

DATED this NINTH day of NOVEMBER 1995.

30 Q AUDIO (ACT) PTY LTD
by
THOMSON PIZZBY

ABSTRACT

A method of triggering an audio and/or visual file in a mobile audio and/or visual system, the method comprising:-

5 determining the position of the audio and/or visual system;

comparing the determined position with a predetermined position or area having an associated audio and/or visual file; and

10 triggering the audio and/or visual file when the determined position corresponds to the predetermined position or area.